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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/729,718 | 12/05/2003 | Yoshinao Morikawa | 559502000700 | 2671 |
| 25226 | 7590 | 10/19/2004 | EXAMINER | |
| MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018 | | | HOANG, HUAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2818 | |

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,718

Applicant(s)

MORIKAWA, YOSHINAO

Examiner

Huan Hoang

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0715 and 01604.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(a) as being anticipated by Nakajima et al. (EP 1109170 A3 cited by Applicant).

Nakajima et al. discloses a nonvolatile memory cell having all the elements as recited in claims 1-3, 5 and 6 (Fig. 1).

The bit lines are considered the digit lines in Fig. 1.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 5 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Asano et al.

Asano et al. (Fig. 6) shows a nonvolatile memory cell (MC) having all the elements as recited in claims 1-3, 5 and 11 as follows:

- a plurality of variable resistive elements (MTJ1-MTJ2) capable of storing information in accordance with a change of electrical resistance; and
- a selection element (Tr1) for selecting the variable resistive elements in common; wherein
- one ends of the variable resistive elements are connected each other, and
- an electrode of the selection element is connected with one end of each of the variable resistive elements;
- wherein the variable resistive elements respectively uses an MRAM element (Abstract).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. in view of Lu et al.

Asano et al. discloses all the elements as recited in claim 4 (Fig. 6) except for the selection element being a diode. However, the use of a diode for a cell selection device is well-known in the art for selecting a variable resistive memory cell and this is disclosed by Lu et al. (paragraph [0028]). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to use a diode as a cell selection for selecting a memory in a memory device.

7. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. in view of Lu et al.

Nakajima et al. discloses all the elements as recited in claims 4 and 7 (Fig. 1) except for the selection element being a diode. However, the use of a diode for a cell selection device is well-known in the art for selecting a variable resistive memory cell and this is disclosed by Lu et al. (paragraph [0028]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a diode as a cell selection for selecting a memory in a memory device.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al.

Claims 9 and 10 differ from Asano et al. in reciting a charging circuit and an equalizing transistor for precharging and equalizing the bit lines before a reading operation. However, the use of a precharging circuit and an equalizing transistor is well-known in the art to precharge the bit lines and equalizing the bit lines before a reading operation. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a charging circuit and an equalizing transistor to precharge and equalize the bit lines before the reading operation.

Allowable Subject Matter

9. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

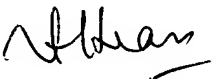
The following is a statement of reasons for the indication of allowable subject matter:

The prior does not teach or suggest the following limitation "wherein a hierarchical bit line structure is used in which at least a plurality of blocks is arranged in the column direction" recited in claim 8.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huan Hoang whose telephone number is (571) 272-1779. The examiner can normally be reached on Mon-Fri 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Huan Hoang
Primary Examiner
Art Unit 2818

HH
10/17/04.